

Title: THE ATOM BOMB (USSR)

Source: Bol'shaya Sovetskaya Entsiklopediya, Vol 3 (2nd edition,
1950) pp 132-4, Russian book (encyclopedia)

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[NOTE: The above is the title of an article appearing in volume 3 of the Great Soviet Encyclopedia, 2d edition (1950), pages 432-4. The purely technical discussion and historical development are taken from two English-language works published in America and translated into Russian; namely, Smyth's "Atomic Energy" and the Science and Engineering of Nuclear Power, a symposium of the works of 13 authors edited by Clark Goodman.

Below are given only abstracts of passages of purely Russian origin. The few purely technical remarks are given as expressing the official Russian position on important technical points, e.g., the number of neutrons emitted in uranium's fission.]

At present three different nuclear fuels are known: (1) uranium isotope 235 comprising 0.7% of natural uranium; (2) plutonium 239 obtained artificially by irradiation of uranium by neutrons; (3) uranium isotope 233 prepared artificially by irradiation of thorium by neutrons.

Fission of uranium is accompanied by the release of 2-3 new neutrons.

Soviet physicists G. N. Flerov and K. A. Petrzhak discovered the spontaneous fission of the uranium nucleus.

In reply to the question of the Moscow correspondent of the Sunday Times 17 Sep 1946, Stalin said: "Atom bombs are intended to intimidate the timid and nervous, but they cannot decide the fate of war, since there are insufficient numbers of atom bombs to do this." (Pravda gazette, 25 Sep 1946, No 228, page 1.)

Soviet scientists have done considerable work in nuclear physics: discovery of the spontaneous fission of uranium, theory of nuclear fission, theory of the chain reaction, etc.

The principles of the chain reaction are simple, but the main difficulty in the solution of the problem is the execution of a number of complex and various tedious scientific and engineering problems, which were necessary to

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solve in the process of construction of nuclear reactors, installations for the obtaining of great quantities of heavy water (which is needed in one of the types of reactors) and separation of the uranium isotopes.

American diplomacy attempts to intimidate other peoples with the atom bomb to further American imperialism. These attempts, however, as a result of the resolute and consistent world policy developed by the USSR have collapsed.

American imperialists have attempted to conduct their policy of "atomic" blackmail, relying on an imaginary monopoly on the secret of the atom bomb. A TASS report, however, stated that "already, 6 Nov 1947, the minister of foreign affairs, V. M. Molotov, had announced that the secret of the atom bomb does not exist anymore." This announcement showed the Soviet Union has already discovered the secret of the atomic weapon. (Pravda, 25 Sep 1949, No 266, page 2.)

The hydrogen bomb is being attempted by the American imperialists. It requires an ordinary atom bomb to "ignite" it.

Nuclear fuel can also be employed to propel rockets, submarines, ships, and aircraft. Great difficulties, however, must first be overcome. Undoubtedly the communist society will find great benefit from nuclear energy, whereas the capitalists are interested only in war uses.

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